

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of)
)
Ben SAIDI and)
Mark LINDNER)
)
Serial No. 10/626,048)
)
Filed: July 23, 2003)
) **For: METHOD AND APPARATUS FOR**
) **SUPPRESSING SILENCE IN**
) **MEDIA COMMUNICATIONS**

) **Group No. 2151**

REPLY BRIEF UNDER 37 C.F.R. § 41.41

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 223 13-1450

Sir:

In response to the Examiner's Answer dated May 12, 2010, this Reply Brief under 37 C.F.R. §41.41 is being filed.

The fees required under § 41.20(b)(2) should be charged to Deposit Account No. 17-0026.

REMARKS / ARGUMENTS

The Appellants thank the Examiner for the comments provided in the Examiner's Answer dated 5/12/2010. Below, the Appellants' response to these comments can be found below.

1. The Specification Objection.

Page 9 of the 5/12/2010 Examiner's Answer states the following:

In response to appellant's argument with respect to specification objection has been considered and withdrawn by the examiner. Examiner respectfully thanks appellant for clarifying how the silence frames are evaluated while evaluating the media streams.

Accordingly, the above-noted Specification Objection has been withdrawn and no longer need be evaluated by the Board during this Appeal.

Also, in this section, the Examiner refers to comments made by the Appellants regarding a particular embodiment from the Specification that were made to show support for the "evaluating" limitation of claim 1, for instance. This embodiment description was provided to overcome the Specification Objection and to show support for the claimed subject matter, but was not provided to limit the claims to this particular embodiment. The Appellants appreciate the Examiner's conditional offer to allow the claims, as summarized on Page 10 of the 5/12/2010 Examiner's Answer. However, the Appellants maintain the current claims already distinguish over Yao and should be allowed based on their own recitations (without including the word "only" and/or the limitations of claims 4-6).

2. Regarding the rejection (2) of independent claims 1, 7, 13 and 19, and/or the claims dependent thereon, under U.S.C. §102(e) to Yao.

The Appellants have reviewed the Examiner's remarks between Pages 11-17 of the 5/12/2010 Examiner's Answer that are given to refute arguments made by the Appellants in the 2/22/2010 Appeal Brief. However, the Appellants respectfully maintain the positions as asserted in the 2/22/2010 for reasons which will now be explained.

The Examiner states "Yao clearly discloses evaluating latency and clearly discloses that increased in latency happens due to overflows and high disruption caused by silence frame and poor channel conditions (see column 12, lines 15-29 [of Yao])" (e.g., see Page 11 of the 5/12/2010 Examiner's Answer). This is a slight mischaracterization of Col. 12, lines 15-29 of Yao. Referring to Yao, Col. 12, lines 15-29 describes that frames are dropped at higher rates in poor channel conditions, which causes a long re-transmission queue (i.e., to retransmit the bad frames that did not transmit successfully the first time as well as new incoming frames for transmission) and an underflow condition at the receiver's buffer (because few frames are received successfully). When channel conditions improve, the receiver's buffer overflows due to too many 'good' frames being delivered at this point in time (i.e., due to the large queue-fill that occurs during the poor channel quality environment).

The insertion of silence frames into the receive buffer described at this section is specific to the receiver's buffer when there is an underflow condition, essentially to provide 'comfort noise' so that the user experience is improved. This section only describes *adding* silence frames (i.e., not dropping them). The Examiner's suggestion that silence frames cause "overflows and high disruption" is incorrect, as overflows are simply caused when poor channel conditions cause the queue 408 to hold an excessively high amount of frames for transmission. To reduce overflow at the transmitter 400 during the poor channel quality environment (which indirectly

leads to overflow at the receive buffer when the environment improves), frames (i.e., which can be silence frames or non-silence frames) are then dropped at “an increased rate at transmitter 400” so that the queue 408 of frames for transmission does not result in overflow at the receiver’s buffer (when the environment improves). Nothing in this section suggests that the frames being dropped at the transmitter 400 are silence frames.

Likewise, in the event that overflow occurs at the receive buffer, the receiver can drop some of these frames at the fixed rate as well. In this case, no silence frames would be added at all (i.e., that only helps in an underflow condition at the receive buffer when there is insufficient media to play to the user), and the dropped frames are not necessarily silence frames. Indeed, nothing suggests that silence frames need even be present to trigger frame-dropping. Rather, the triggering criterion is simply the fill-level of the receive buffer.

The Examiner cites to the above-noted section of Yao (where Yao discloses adding silence frames) at the bottom of Page 12 and the top of Page 13 of the 5/12/2010 Examiner’s Answer. However, the Appellants believe that the Examiner reaches an incorrect conclusion based on this section. The Examiner states:

As it is clear from Yao that silence frame was provided to a voice decoder in order to minimize the disruption, examiner considers silence frame embodied in “data frames [silence frame provided to voice encoder] generated by voice encoder are then dropped at the first predetermined rate”

(e.g., see Page 13 of the 5/12/2010 Examiner’s Answer)

Respectfully, the above-noted statement on the part of the Examiner is an incorrect characterization of Yao. The queue 408 is at the transmitter and frames are dropped at the fixed rate from the queue 408 (e.g., “it is desirable to drop frames at an increased rate at transmitter 400 ...”, Col. 12, lines 26-29 of Yao). The silence frames that are *added* are at the *receiver*, not the transmitter (e.g., “[w]hen the receive buffer underflows, silence frames ... are provided to a voice decoder”, Col. 12, lines 21-23 of Yao). The dropped frames at the transmitter 400 are not

necessarily silence frames. Rather, they are simply frames that would otherwise be queued for transmission to the receiver that are dropped to avoid an overflow condition from arising. The silence frames are added via a separate procedure at the receiver in response to an underflow condition in the receive buffer. Therefore, the Examiner's citation to Col. 17, 7-16 of Yao is simply directed to the frame-dropping that occurs at the transmitter 400 in a poor channel quality environment. This has little to do with dropping silence frames, since the dropped frames could very well hold media. Yao's discussion of dropping frames at the receiver occurs later at Col. 17, lines 17-24. However, even in the case where overflow occurs at the receive buffer, the resultant dropped frames are not necessarily silence frames because silence frames are not even required to be present to trigger frame-dropping (the overflow condition itself is sufficient).

On Page 14 of the 5/22/2010 Examiner's Answer, the Examiner again cites to the same section of Yao at Col. 12. However, the Examiner refers both to the section of Yao where silence frames are added at the receive buffer and to where frames are dropped at the transmitter 400. It is undisputed that silence frames are added at the receive buffer when the receive buffer underflows in a poor channel quality environment. However, these silence frames are simply added to provide comfort noise to the user. The frames that are dropped at the transmitter to avoid a future overflow condition are simply the frames that were supposed to be transmitted. Likewise, the frames that are dropped at the receiver in the event that an overflow condition occurs are simply the frames that happen to be present in the receive buffer at this time. It is incorrect to conclude that these dropped frames (at the transmitter 400 or the receiver) to prevent a current or future overflow condition are silence frames simply because silence frames are added at the receive buffer during an underflow condition.

The Examiner states “[i]f the suppressing, as argued by applicant, is reducing the silence frame, then examiner respectfully reminds it will also lead to improve the latency” (e.g., see Page

14 of 5/22/2010 Examiner’s Answer). Of course dropping frames reduces the latency. That is a primary objective in Yao. However, reducing the latency is achieved simply by virtue of any frames being dropped from the queue 408 at the transmitter 400 or the receiver during an overflow condition. In other words, fewer frames being queued for transmission means the transmitter 400 can transmit the frames more quickly because fewer frames are ‘waiting in line’ (latency) for transmission to the receiver, so to speak, and fewer frames being queued at the receiver means fewer frames are ‘waiting in line’ (latency) to be played. The latency can be reduced just as easily by dropping non-silence frames as dropping silence frames. Latency reduction in Yao does not require specifically that silence frames be dropped (any frame being dropped is sufficient), but simply that the number of frames waiting in the queue 408 (or the queue 612 at the receiver 600) be reduced.

On Page 15 of the 5/12/2010 Examiner’s Answer, the Examiner states “[t]he person skilled in the art would clearly recognize such suppressing includes suppressing the silence frame that is in access of a predetermined number of silence frames situated between the two successive media frame”. The Appellants respectfully disagree, because the frame being dropped is not necessarily a silence frame.

The Examiner argues that the Appellants are arguing features not recited in the claim, because the Appellants’ argument includes references to a “particular” silence frame (e.g., see bottom of Page 15 and top of Page 16 of the 5/12/2010 Examiner’s Answer). The Appellants respectfully disagree. Claim 1 for example, recites “wherein said stream of media comprises of one or more silence frames”, “evaluating the stream of media to identify the one or more silence frames” and “automatically suppressing the one or more identified silence frames from the received stream of media”. Under the rules of antecedent basis with respect to claim interpretation, the “one or more silence frames” being dropped are the same silence frame(s) that

are identified via the “evaluating” limitation. Thus, the silence frame(s) being dropped are the “particular” silence frame(s) that were identified. Therefore, the Appellants believe references to the “particular” silence frame(s) (e.g., in this case, the evaluated and identified silence frame(s) within the received media stream) are justified by virtue of antecedent basis.

The Examiner states “[i]n order for Yao to provide latency reduction, Yao must have determine occurrence of at least one silence frame when providing such silence frame or erasure frames to voice decoder” (e.g., see Pages 16-17 of the 5/12/2010 Examiner’s Answer). The Appellants respectfully disagree. Adding silence frames to an underflowing receiver buffer requires no recognition of which other frames in the receive buffer are silence or non-silence frames (i.e., the frames in an underflowing receive buffer could be all silence or all non-silence frames, and in either case Yao adds silence frames to even-out the playback). It is true that the receiver is aware that the frames being added are silence frames, but it is absurd to suggest that these frames would then be dropped. The Appellants remind the Examiner that the adding of silence frames into the receive buffer occurs at the receiver. Upon adding these silence frames to the receive buffer, the frames are simply played out to the user. Why would the receiver both add silence frames and drop the same silence frames to/from the receive buffer? The Appellants cannot think of a reason one of ordinary skill in the art would have such motivation. Again, the only frame dropping that occurs at the receiver is when there is an overflow condition at the receive buffer, and the silence frames are only added to the receive buffer when there is an underflow condition at the receive buffer. These are mutually exclusive triggering conditions, and adding silence frames during underflow does not imply removing silence frames during overflow because no silence frames are identified by Yao (or even need to be present for overflow to occur).

Accordingly, Appellant respectfully requests that the Appeal Board withdraw the art grounds of rejection for the reasons given above in conjunction with the remarks provided by the Appellants within the 2/22/2010 Appeal Brief.

CONCLUSION

The Appellant respectfully submits that claims 1-25, 27, 29, 31 and 33-36 are patentable over the applied art and that all of the rejections and objections of record should be reversed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 17-0026 for any additional fees required under 37 C.F.R. § 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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